PLEASE AMEND THE CLAIMS AS FOLLOWS:

1-98. Cancelled

99 (Currently amended) A method of effecting mass analysis on an ion stream, the method comprising ~~the steps of~~:

(a) passing the ion stream through a first mass resolving spectrometer, to select parent ions having a first desired mass to charge ratio;

(b) subjecting the parent ions to collision induced dissociation to generate fragment ions;

(c) trapping the fragment ions and any remaining parent ions;

(d) periodically releasing pulses of the trapped ions into a Time-Of-Flight instrument to detect ions with a second mass to charge ratio; and

(e) providing a delay between the release of the pulses of trapped ions and initiation of pulses in the Time-Of-Flight instrument, and adjusting the delay to improve the duty cycle efficiency of ions with the second mass to charge ratio.

100-114. Cancelled

115. (Currently amended) A method of effecting mass analysis on an ion stream, the method comprising ~~the steps of~~:

(a) passing the ion stream through a first mass resolving spectrometer, to select parent ions having a first desired mass-to-charge ratio;

(b) subjecting the parent ions to collision-induced dissociation to generate fragment ions;

(c) trapping the fragment ions and any remaining parent ions;

(d) periodically releasing pulses of the trapped ions into a time of flight instrument to detect ions with a second mass-to-charge ratio; and

(e) providing a delay between the release of the pulses of trapped ions and initiation of push-pull pulses in the time of flight instrument, and adjusting the delay to improve the duty cycle efficiency of ions with the second mass-to-charge ratio.

116-120. Cancelled